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TITLE: Rust inhibitor - derived from dry distillation of wood etc

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BASIC-ABSTRACT:

The product is obtained by distilling wood from deciduous trees such as oak,
beech, birch, or chestnut, and consists of an acid substance of pH 2.5-3.0,
with weak oxidising properties. It may be used diluted with water, and forms a
black film or the workpiece surface.

TITLE-TERMS: RUST INHIBIT DERIVATIVE DRY DISTIL WOOD

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METHOD FOR PREVENTING IRON RUST

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METHOD FOR PREVENTING IRON RUST

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[There are no amendments to this patent.]

Detailed explanation of the invention

The purpose of the present invention is to provide a method for preventing rust by a simple operation that forms a coated film mainly composed of triiron tetraoxide on iron material or iron product. The method of the present invention is characterized by the fact that "a strong acidic substance being obtained by extracting from a dried product of a plant is applied as it is or in a state diluted with water to the surface of iron, so that a black coated film is formed."

The strong acidic substance for preventing rust being used in the above-mentioned method of the present invention is a substance that has a pH value of about 2.5-3.0 and has a relatively weak oxidizing power, and it is preferably extracted from a dried product of a tree with [illegible] leaves such as Japanese oak, Japanese beech, birches, and Japanese chestnut tree. The reason for this is that needle-leaf trees such as pine and Japanese cedar include many unnecessary components such as turpentine oil, include many tar portions in the dried product, and are evergreens, thus an appropriate time to use is difficult to determine.

The action of the above-mentioned acidic substance on the iron surface is carried out under the following patterns.

1. Spread on iron surface

In this case, the above-mentioned acidic substance is used as a raw solution as it is, or the dilution rate is set to a relatively low value of 20 or less, for instance.

2. Immersion of iron product

In this case, the above-mentioned dilution rate can be raised to at least 200 which can be seen in application examples that will be mentioned later.

3. Circulation on the surface of iron product

In this case, the dilution rate is similar to that of the second section, and the solution is circulated.

Among these patterns, 1 is appropriately applied to machine tools in a completed state, and 2 is appropriately applied to small articles such as a chisel. Also, 3 is appropriately applied to boilers, etc., having a circulation system of a solution in itself.

Next, the above-mentioned method of the present invention is explained in detail by application examples.

Application Example 1

In November at the end of the fall season in which the amount of sap was relatively low, an oak was felled, branches were lopped off, and cutting was carried out. After holding it for 30 days, it was baked according to a method for manufacturing charcoal by using a "coal baking crucible," and the dried product being generated at that time was collected. This product was held for 3 months, and precipitates mainly composed of a tar portion were removed. In order to remove the remaining tar portion, a separation method that added petroleum to the solution obtained as mentioned above and moved the tar portion to the petroleum side by [illegible] was carried out five times. Then, under the low pressure of a water stream of about 10 cm from an aspirator, the distillation was repeated 6 times, and a solution to be applied to the surface of an iron was obtained. The pH value of the solution was 2.7. Next, this solution is simply called a raw solution.

A test on the formation of an anticorrosive coated film was carried out in an immersion pattern for a chisel, and the generation state of an anticorrosive coated film was observed by using the raw solution as it was and changing the dilution rate to 10, 50, 100, 200, 500, and 1,000.

When the dilution rate was 200 or less, the generation of a black coated film due to the immersion was sufficiently advanced for about 10 h, and little change was seen thereafter. On the contrary, when the dilution rate was 500 and 1,000, a diiron trioxide was generated on the iron surface, and its separation and precipitation phenomenon was caused along with the generation of a triiron tetraoxide. On the iron surface, a considerable roughness was generated. Therefore, in this case, it is considered that the maximum value of an allowable dilution rate is between 200 and 500.

Application Example 2

A raw solution composed of a biochemical reaction product of a plant and its hydrolyzed product was used, and chlorophylls played an important roll for a viable reaction of the plant. While expecting the activation of the raw solution or its diluted solution, similar to Application Example 1, a test was carried out under the addition of the chlorophylls. As the chlorophylls, those sampled from leaves of "arrowroot" were used, and they were added at a weight ratio of 1% to the raw solution.

In this test, it was confirmed the black coated film being generated when the solution was applied at a dilution rate of 200 times or less was very dense, smooth, and glossy compared with the above application example. The causes for these densification and glossiness are not certain.

The method of the present invention mentioned above can be easily applied and can also be easily applied to large-scale products to which conventional methods are difficult to apply. Its application range is also very wide.

Claim

A method for preventing iron rust characterized by the fact that a strong acidic substance obtained by extracting from a dried plant product is applied as it is or in a state diluted with water to the surface of iron, so that a black coated film is formed.